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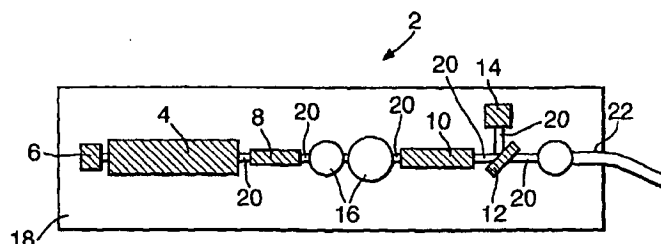
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(54) Title: MONOLITHIC OPTICAL TRANSMITTER AND RECEIVER APPARATUS INCORPORATING HOLLOW WAVEGUIDES



(57) Abstract: A transmitter apparatus (2) is described that comprises one or more lasers (4), modulation means (10) to intensity modulate radiation output by each of said one or more lasers (4), and output means for outputting the modulated radiation produced by the modulation means into, for example, an optical fibre (22). The apparatus comprises hollow core optical waveguides (20) formed in a substrate (18) which, in use, guide radiation from the one or more lasers (4) to the modulation means (10) and from the modulation means (10) to the output means. An associated receiver apparatus (30) is also described that comprises one or more detectors (32) and one or more optical fibre attachment means, the one or more optical fibre attachment means being arranged to receive one or more optical fibres (42). The receiver is characterised in that radiation is guided from the one or more optical fibres (42) to the one or more detectors (32) by at least one hollow core optical waveguide (40) formed in a substrate. A combined receiver/transmitter apparatus (70) is also shown.

WO 2005/012970 A1

WO 2005/012970 A1



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